

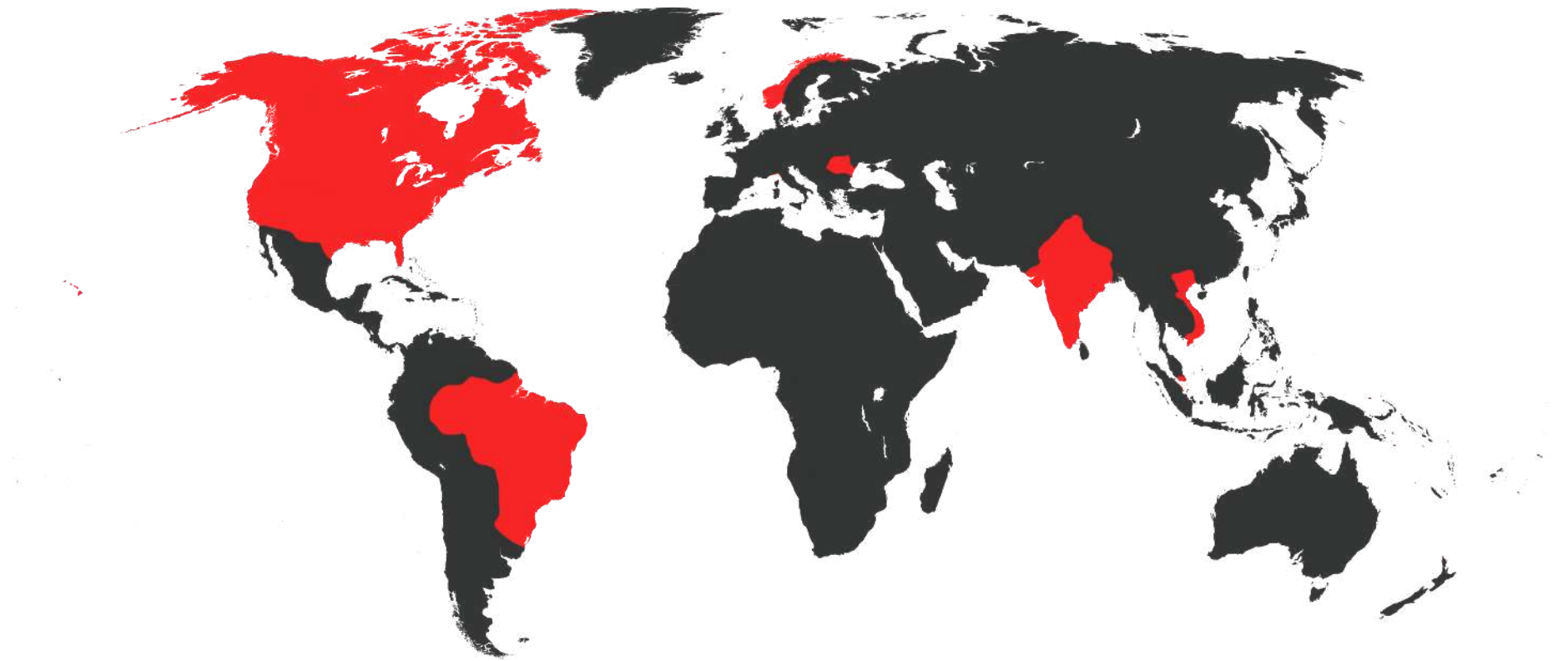
**VARD**<sup>TM</sup>

a **Fincantieri** company

**Vard Marine**

**built on trust<sup>TM</sup>**

# VARD Worldwide



## Vard Marine

### CANADA

Vancouver, BC  
Ottawa, ON



### USA

Houston, TX



## VARD Shipyards

### NORWAY

Vard Aukra  
Vard Brattvaag  
Vard Brevik  
Vard Langsten  
Vard Søviknes



### ROMANIA

Vard Braila  
Vard Tulcea



### BRAZIL

Vard Promar



### VIETNAM

Vard Vung Tau



## WE ARE VARD MARINE

When Vard Marine designs an advanced offshore or specialised vessel we focus on quality, solid reliability and the long term operation of the vessel. Ship design is about commitment and customization and about solving new challenges through cooperation, engineering and technology development. Our customers will experience the same dedication and flexibility regardless of the vessel type.

Venturing into deeper and harsher waters, increasing health, safety and environmental standards, and a continuous drive for efficiency demands more advanced vessels. This increases the importance of even closer cooperation and relationships between ship designers, ship builders and ship owners.

Ships are the proud, visible product of the competence that exists in our partnerships with our clients. With an extensive range of Vard Marine designs already constructed, and the experience from the hundreds of vessels delivered by the Vard Group, we are convinced - ship design is all about trust.

# CONCEPT DEVELOPMENT

PROJECT  
DEFINITION

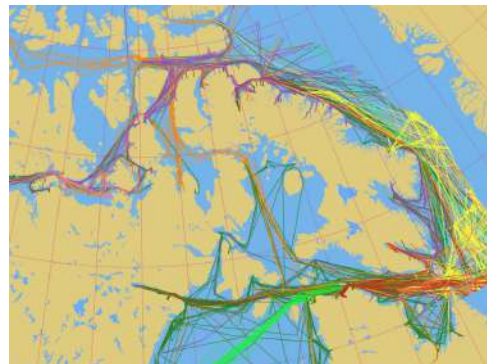


OPERATING  
PARAMETERS

PERFORMANCE  
ASSESSMENT

ECONOMIC  
ANALYSIS

TAILORED  
SHIP DESIGN



## ENVIRONMENTAL

TEMPERATURE EXTREMES  
HAZID/HAZOP ANALYSIS  
SEA CONDITIONS  
ICE CONDITIONS

## OPERATIONAL

OPERATING COSTS  
REVENUE PROJECTIONS  
OPTIMAL DESIGN SOLUTIONS  
SAFETY CASE DEVELOPMENT



# TECHNOLOGY APPLICATION

ALTERNATIVE  
PROPULSION

LNG  
PROPULSION  
FUEL

LNG  
BUNKERING

HYBRID  
ELECTRIC  
PLANT

DC GRID  
SOLUTIONS



## MISSIONS SYSTEMS

RAPID HEELING SYSTEMS/STABILIZATION SYSTEMS  
HULL MOUNTED SCIENTIFIC & SURVEY SENSORS  
HEAVE COMPENSATED GANGWAYS AND CRANES  
SCIENCE & OCEANOGRAPHIC LARS  
WEAPONS SYSTEMS

## ENVIRONMENTAL

EMISSION CONTROL SYSTEMS  
COMPOSITES MATERIALS  
WELDING APPLICATIONS  
BALLAST WATER TREATMENT  
GREEN PASSPORT/ENVIRO+  
LIFECYCLE ANALYSIS



# ENGINEERING ANALYSIS

## ***MACHINERY TRADE-OFF***

Analyses that consider missions, emissions, costs and capabilities.

## ***SHIP SYSTEMS***

Modelling and simulation of critical/mission systems to improve performance, energy efficiency, reliability and cost



## ***EMISSIONS***

Full Life-Cycle modelling and control strategies for power plant emissions

## ***NOISE EMISSIONS***

Identifying reduction methodologies for ship board and water-borne noise



## ***COMPUTATIONAL FLUID DYNAMICS***

Complete range of marine related analyses

## ***FINITE ELEMENT ANALYSIS***

Local and Global analyses of static, dynamic, & vibratory responses



## ***SPEED & POWERING***

Predictions use state-of-the-art methodologies, calibrated against model and full-scale data

## ***SHIP MOTIONS***

Motions, accelerations and other seakeeping responses are derived to provide operability information



## ***MANOEUVERING***

Performance assessment using early design stage tools, numerical analysis, model tests & full scale trials

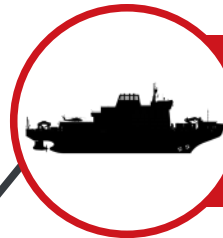
## ***DYNAMIC POSITIONING & MOORING***

Analysis using advanced software tools to confirm operability and safety in normal and survival conditions

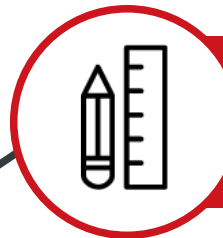




# DESIGN & CONSTRUCTION SUPPORT



CONTRACT AND FUNCTIONAL  
DESIGN PACKAGES



FULL SHIP SPECIFICATIONS



PRODUCTION AND BUILD  
SUPPORT



ON-SITE CONSTRUCTION  
SUPERVISION



SUPERVISION OF HARBOUR  
ACCEPTANCE AND SEA TRIALS

**VARD EQUIPMENT & SOLUTIONS**  
A DIVISION OF VARD THAT PROVIDES  
FULL EQUIPMENT AND DESIGN  
PACKAGES

**VARD**  
a Fincantieri company

# VARD 1-SERIES

## Platform Supply Vessels

We design a complete range of Platform Supply Vessels (PSV). PSVs are designed to transport liquid and bulk cargo to and from offshore oil rigs and platforms. PSVs are able to perform a variety of tasks to support offshore operations; Vard Marine's PSVs are designed with focus on cargo capacity and excellent manoeuvring capabilities combined with an efficient hull form and internal layout for lower construction and operational costs.

### DESIGN RANGE

Length Overall  
*60 - 100 metres*

Depth  
*5.0-10.0 metres*

Deadweight  
*4,500 - 8,000 MT*

Deck Area  
*300 m<sup>2</sup> - 1,050 m<sup>2</sup>*

Complement  
*22 - 45*



**VARD 1 290**



**VARD 1 300**



**VARD 1 310**



**VARD 1 311**

A selection of Vard Marine designs



# VARD 2-SERIES

Anchor Handling Towing Supply Vessels



**VARD 2 220**



**VARD 2 240**



**VARD 2 270**



**VARD 2 270**

We design technologically advanced Anchor Handling Towing Supply vessels (AHTS) capable of operations in the harshest environments. The latest hybrid electric propulsion machinery and state of art towing systems are incorporated into our designs. AHTS vessels perform anchor handling duties and towage of offshore drilling units and floating production units. As AHTS vessels generally have free deck area, and tanks below deck they have the flexibility to carry liquid and bulk cargo.

## DESIGN RANGE

Length Overall  
60 - 85 metres

Deadweight  
1,500 - 3,500 MT

Deck Area  
350 m<sup>2</sup> - 600 m<sup>2</sup>

Bollard Pull  
80 - 160 MT

Complement  
22 - 40

We design and build highly advanced Offshore Subsea Construction Vessels (OSCV) for the oil and gas industry. These complex vessels perform subsea operations and maintenance work, and include subsea construction vessels, diving support vessels, ROV support vessels, well intervention vessels, well stimulation vessels, and ice-classed offshore vessels designed to operate in Arctic areas.

## DESIGN RANGE

Length Overall  
75 - 115 metres

Deadweight  
4,000 - 8,000 MT

Crane Capacity  
75 - 250 MT

Crew Complement  
45 - 150

# VARD 3-SERIES

## Offshore Construction Supply Vessels



**VARD 3 240**



**VARD 3 310**



**VARD 3 330**



**VARD 3 380**

A selection of Vard Marine designs

# VARD 7-SERIES

## Offshore Patrol Vessels



**VARD 7 072**



**VARD 7 085**



**VARD 7 090**



**VARD 7 110**

We design highly capable offshore patrol vessels, using a commercial approach, that can withstand some of the toughest ocean conditions in the world. Experienced staff work closely with our clients, using many in-house software design tools and our extensive vessel database to define vessel characteristics that meet the requirements and expectations of the customer.

### DESIGN RANGE

Length Overall  
*40 - 110 metres*

Displacement  
*250 - 4,200 MT*

Crew Complement  
*18 - 110*

Range  
*2,000 - 10,000 n-m*

Speed  
*18 - 26 knots*



# VARD 9-SERIES

We design specialized vessels, such as research and coast guard vessels, ferries, floating power plants, and icebreakers. We deliver standard ship designs as well as advanced vessels with significant customer-specific adaptations.

## Other Specialized Vessels



## DESIGN RANGE

Ferries  
25 - 470 vehicles  
100 - 2,000 passengers

Research Vessels  
65 - 95 metres

Icebreakers  
0.6 - 2.5 m thick ice

Power Plants  
40 - 240 MW

Logistic Vessels  
80 - 110 metres

# CSS DESIGNS

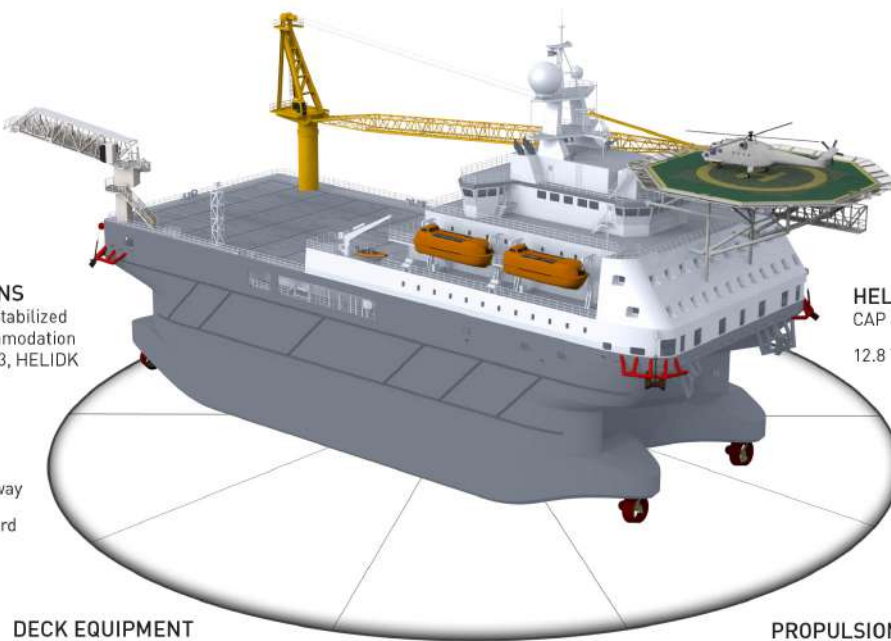
## Compact Semi- Submersibles

### CLASS NOTATIONS

ABS, +A1, Column Stabilized Unit, UWILD, Accommodation Service, (E), DPS-2/3, HELIDK

### GANGWAY

Telescopic heavy compensated gangway  
Up to 42.5 m outboard



### HELIDECK

CAP 437 compliant helideck  
12.8 T helicopter

### 4-POINT MOORING

70 m operating depth

### DECK EQUIPMENT

150 MT Lattice Boom Crane  
50 MT Knuckle Boom Crane  
9 m x 8 m Moonpool  
ROV Work Systems

### LIFESAVING EQUIPMENT

Totally enclosed lifesaving for up to 501 persons

### PROPULSION

DP-2 and DP-3 thruster, power and control configurations



The Compact Semi-Submersible integrates the motion benefits of a semi-submersible into a compact platform to ensure competitive charter rates and an industry leading design in terms of operability, time on station, and operational flexibility. Design variants include accommodation, light well-intervention, construction and dive support.

## DESIGN RANGE

Length Overall

*65 - 100 metres*

Depth

*17.6 - 22.2 metres*

Deadweight

*4,600 DWT - 11,500 MT*

Deck Area

*750 m<sup>2</sup> - 1,350 m<sup>2</sup>*

Complement

*120 - 550*



# DESIGN DELIVERIES



VARD 1 260 for Laborde



VARD 1 290 for Bravante Group



VARD 1 300 for Aries Marine



VARD 1 301 for Harvey Gulf



VARD 1 302 for Hornbeck Offshore



VARD 1 310 for Hornbeck Offshore



VARD 1 311 for Harvey Gulf



VARD 2 270 for Seacor Marine



VARD 3 240 for Harvey Gulf



VARD 3 310 for Harvey Gulf



VARD 7 080 for Irish Naval Service



VARD 7 085 for Royal New Zealand Navy



VARD 7 090 for Irish Naval Service



VARD 9 105 for UK Royal Navy



VARD 9 304 for Seaspan Ferries



Compact Semi Submersible  
Gran Energia



Compact Semi Submersible  
Hallin Marine



Compact Semi Submersible  
Belait Shipping Co.

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